T-AGOS / SURVEILLANCE TOWED ARRAY SENSOR SYSTEM (SURTASS) AND LOW FREQUENCY ACTIVE (LFA)

Navy ACAT II/III Programs		**Prime Contractors**
Total Number of Systems:	23	Halter Marine (T-AGOS 23)
Total Program Cost (TY$):	$1495.9M	
Average Unit Cost (TY$):	$60.5M	
Full-rate production:	N/A	(T-AGOS 23 class limited to first ship)

SYSTEM DESCRIPTION & CONTRIBUTION TO JOINT VISION 2020

T-AGOS/ Surveillance Towed Array Sensor System (SURTASS)/Low Frequency Active (LFA) is an element of the Integrated Undersea Surveillance System (IUSS), providing mobile detection, tracking, and reporting of submarine contacts at long-range, thereby contributing to the operational concepts of ***full-dimensional protection*** through ***information superiority***. The current or baseline sensor is a long array of hydrophones towed by a dedicated non-combatant ship designated T-AGOS. There are three significant upgrades planned. One upgrade, the Acoustic Rapid Commercial-Off-The-Shelf (COTS) Insertion, is designed to process both IUSS and SURTASS acoustic data. The Littoral Low Frequency Active upgrade is a compact LFA system designed to be backfitted on three SWATHs and includes a deployable variant. The third upgrade is the TB-29 Twin Line Array, a common (surface and submarine communities), low cost array providing high performance in both deep water and littoral environments. The SURTASS system includes several passive array variants; the original production array, a reduced diameter array; a COTS A180R array; and a COTS A180R Twin-line for littoral surveillance. The LFA system includes a high power source array for active transmissions. In its final

configuration, SURTASS/LFA will be used as either a passive system or in one of two active modes of LFA: monostatic or bistatic receive.

To date, twenty-two ships have been delivered to the Navy, eighteen monohulls and four Small Water-Plane Area Twin Hull (SWATHs). The SWATH design provides greater stability in high sea states and quieting to enhance the performance of the receive array. All but three of the monohulls have been deactivated. The current budget supports eight ships, three monohulls (T-AGOS 8, 9, and 12), four SWATHS (T-AGOS 19-22), and R/V CORY CHOUEST. The T-AGOS 23 class (SWATH) ship is larger than the T-AGOS 19 class ship in order to handle the larger and heavier equipment for the LFA system. Original procurement was projected for up to five T-AGOS 23 class ships, however, the current program is limited to just the first ship.

BACKGROUND INFORMATION

IOT&E was completed in 1992 and 1993 using DOT&E approved test plans. The T-AGOS 19 SWATH platform was found operationally effective and suitable to support the SURTASS Baseline System. The platform was also found to be potentially operationally effective and potentially operationally suitable in supporting the SURTASS Block Upgrade system, which was installed and operationally tested in 1994. The Block Upgrade successfully met all the sonar detection Figure of Merit requirements. Localization and tracking accuracy was satisfactory. The Block Upgrade System was found to be operationally effective and suitable.

In June 1996, SURTASS LFA participated in a major fleet exercise, RIMPAC 96, including the preparatory exercise, TEAMWORK NORTH. The LFA, installed aboard R/V CORY CHOUEST, operated in the open ocean south of the Hawaiian Islands with a U.S. battle group and ships from five allied Pacific nations. In conjunction with the exercise, an OA was conducted which endorsed the use of CORY CHOUEST as an interim fleet asset pending the completion of T-AGOS 23.

In TEAMWORK NORTH, the LFA system detected a foreign submarine while making a transit to the Hawaiian Island area. In RIMPAC 96, LFA performed effectively by detecting all designated exercise participants. The environmental impact of LFA has become a significant issue, and data has been collected to support an environmental impact statement for future use. There is growing concern that testing of all active acoustic detection devices in shallow water ranges may be at risk due to environmental considerations. The lack of an environmental impact statement prevented LFA from being used during RIMPAC 98. SURTASS units did participate, (passive only), in the RIMPAC 98 exercise.

TEST & EVALUATION ACTIVITY

No operational employment of LFA occurred in either FY99 or FY00. The EIS is scheduled for completion in 2001. Further developments and testing will commence once the EIS Record of Decision is completed. Continued slippage in T-AGOS 23 construction resulted in additional delays in the conduct of OT. T-23 was originally planned for delivery in December 1998 but has not yet been delivered. This resulted in cancellation of a planned OA in 4QFY99 and a delay in the SURTASS-LFA OPEVAL on T-23 until 2QFY02.

TEST & EVALUATION ASSESSMENT

Program operational requirement documents and the associated T&E planning documents must be updated to reflect current program upgrades, status and schedule. Operationally, SURTASS is now tasked with providing surveillance and cueing in support of tactical missions in addition to its deep ocean surveillance role. The SURTASS/LFA program must update requirements documents to specifically address this change to direct tactical support. Implementation of COTS technology has resulted in hardware configuration changes that require an update to the TEMP. This update should also describe processing, array configuration and schedule that will be used during T-AGOS 23 DT and OT testing, particularly in regard to bistatic operations. Although Twin Line has been used operationally for five years it has not had an OA. An OA should be accomplished in conjunction with the SURTASS transition to a common (surface and submarine) towed array (TB-29) in a Twin Line configuration.